

WHAT IS CLAIMED IS:

1. A ferrite core for use in coupling transformers and distributing transformers in CATV equipments, said ferrite core being made of a ferrite having a saturation magnetostriction  $|\lambda_s|$  of  $8 \times 10^{-6}$  or less in an absolute value and an initial permeability  $\mu_i$  of 300 or more.
2. A ferrite core for use in coupling transformers and distributing transformers in CATV equipments, said ferrite core being made of a ferrite having an initial permeability  $\mu_i$  of 300 or more, and a maximum impedance distortion ratio of 4 or less after magnetic saturation in a frequency range between 500 kHz and 2000 kHz including a mechanical resonance frequency  $f_0$ .
3. The ferrite core according to claim 1, wherein said ferrite has a residual magnetic flux density  $B_r$  of 150 mT or less in a magnetic field of 10 to 2000 A/m.
4. The ferrite core according to claim 2, wherein said ferrite has a residual magnetic flux density  $B_r$  of 150 mT or less in a magnetic field of 10 to 2000 A/m.
5. The ferrite core according to claim 3, wherein said ferrite has a squareness ratio of 0.5 or less, said squareness ratio being represented by a ratio  $B_r/B_m$  of a residual magnetic flux density  $B_r$  to a maximum magnetic flux density  $B_m$ .
6. The ferrite core according to claim 4, wherein said ferrite has a squareness ratio of 0.5 or less, said squareness ratio being represented by a ratio  $B_r/B_m$  of a residual magnetic flux density  $B_r$  to a maximum magnetic flux density  $B_m$ .
7. The ferrite core according to claim 1, wherein said ferrite has a composition comprising as main components 47 to 50% by mol of  $\text{Fe}_2\text{O}_3$ ,

to 34% by mol of ZnO, 9 to 15% by mol of NiO, and 7 to 9% by mol of CuO.

8. The ferrite core according to claim 2, wherein said ferrite has a composition comprising as main components 47 to 50% by mol of  $\text{Fe}_2\text{O}_3$ , 29 to 34% by mol of ZnO, 9 to 15% by mol of NiO, and 7 to 9% by mol of CuO.

5 9. The ferrite core according to claim 1, wherein said ferrite has a composition comprising as main components 50 to 55% by mol of  $\text{Fe}_2\text{O}_3$  and 10 to 14% by mol of ZnO, the balance being substantially MnO.

10 10. The ferrite core according to claim 2, wherein said ferrite has a composition comprising as main components 50 to 55% by mol of  $\text{Fe}_2\text{O}_3$  and 10 to 14% by mol of ZnO, the balance being substantially MnO.

11. The ferrite core according to claim 1, wherein said ferrite core is a multi-hole core or a toroidal core.

12. The ferrite core according to claim 2, wherein said ferrite core is a multi-hole core or a toroidal core.

15 13. A CATV equipment comprising a coupling transformer and/or a distributing transformer, each of which is constituted by a ferrite core and a winding wound around said ferrite core, said ferrite core being made of a ferrite having a saturation magnetostriction  $|\lambda_s|$  of  $8 \times 10^{-6}$  or less in an absolute value and an initial permeability  $\mu_i$  of 300 or more.

20 14. A CATV equipment comprising a coupling transformer and/or a distributing transformer, each of which is constituted by a ferrite core and a winding wound around said ferrite core, said ferrite core being made of a ferrite having an initial permeability  $\mu_i$  of 300 or more, and a maximum impedance distortion ratio of 4 or less after magnetic saturation in a frequency  
25 range between 500 kHz and 2000 kHz including a mechanical resonance frequency  $f_0$ .

15. The CATV equipment according to claim 13, wherein said CATV

equipment is a coupler, a distributor or an amplifier.

16. The CATV equipment according to claim 14, wherein said CATV equipment is a coupler, a distributor or an amplifier.

17. A bi-directional CATV system comprising transmission lines disposed  
5 between a headend and the terminals of CATV subscribers, amplifiers disposed in said transmission lines for amplifying bi-directional CATV signals, and CATV equipments for branching or distributing said CATV signals, at least part of said CATV equipments comprising a coupling transformer and/or a distributing transformer, each of which is constituted by  
10 a ferrite core and a winding wound around said ferrite core, said ferrite core being made of a ferrite having a saturation magnetostriction  $|\lambda_s|$  of  $8 \times 10^{-6}$  or less in an absolute value and an initial permeability  $\mu_i$  of 300 or more.

18. A bi-directional CATV system comprising transmission lines disposed  
15 between a headend and the terminals of CATV subscribers, amplifiers disposed in said transmission lines for amplifying bi-directional CATV signals, and CATV equipments for branching or distributing said CATV signals, at least part of said CATV equipments comprising a coupling transformer and/or a distributing transformer, each of which is constituted by  
a ferrite core and a winding wound around said ferrite core, said ferrite core  
20 being made of a ferrite having an initial permeability  $\mu_i$  of 300 or more, and a maximum impedance distortion ratio of 4 or less after magnetic saturation in a frequency range between 500 kHz and 2000 kHz including a mechanical resonance frequency  $f_0$ .